

Albania: Demonstrating the benefits of an online immunization registry

Project Optimize is collaborating with the Albanian Institute of Public Health to transform the way immunization data and vaccine stock are managed.

The two-year collaboration aims to evaluate the benefits of a supply chain that uses:

- An online immunization registry to record immunization data and manage vaccine stock.
- Remotely connected temperature monitoring devices to ensure that vaccines are stored at the correct temperature.
- A distribution system organized for optimum efficiency.

An online immunization registry

The Institute of Public Health is developing a computerized immunization registry that can schedule and record child immunizations, as well as manage vaccine stock and storage. The new tool—named IIS—has already been implemented in the pilot district of Shkodër.

IIS replaces the existing paper-based system, automating many of the administrative tasks that health workers are compelled to perform. For example, nurses no longer need to search through their paper-based immunization registries to find the children who need to be vaccinated. With IIS, immunization schedules are created automatically when a child's details are entered into the system.

IIS can also generate immunization coverage reports without requiring nurses to compile their own reports of vaccinations administered, greatly reducing their administrative burden and helping to improve data accuracy.

The main benefits of IIS include:

- Simpler for nurses to plan monthly vaccination schedules and report on vaccinations administered.
- Easier for health workers to track the immunization status of children, identify children who have missed appointments, and contact parents or caretakers.
- Doses can be traced to the vaccine lot from which they came, important for vaccine safety.
- Improved quality of monitoring data, with more



Together with the required vaccines, a health center nurse passes on a printout of the monthly plan to a village health post nurse.

About Optimize

Optimize is a collaboration between the World Health Organization and PATH to identify ways in which supply chains can be optimized to meet the demands of an increasingly large and costly portfolio of vaccines.

We work directly with national governments and other institutions to identify problems in the supply chain and test innovative solutions.

Our goal is to help define an ideal vaccine supply chain that can be used to develop stronger, more adaptable, and more efficient logistics systems, extending the reach of lifesaving health technologies to people around the world.

Timeline

- 2010 to 2012

Partners

- [Albania Institute of Public Health](#)
- [PATH](#)
- [World Health Organization](#)

Activities

- Computerized immunization registry
- SMS-based remote temperature monitoring
- Supply chain modeling

Pilot locations

- Shkodër District

accurate and relevant data at all levels in a more timely fashion. With this information, policymakers are better able to establish vaccination strategies, plan sessions, and define customized supply chains for different parts of the country.

- Better demand forecasting. Vaccines can be distributed “just in time” for the immunization needs of individual children, thus reducing the need for buffer stocks and the risk of wastage.

SMS-based remote temperature monitoring

In Albania, standard thermometers have been replaced by 30-day recording devices with visual alarms. Alarms are typically triggered after 10 consecutive hours over 8°C or 60 consecutive minutes under -0.5°C, as per World Health Organization standards. The recording devices are used in most health centers where vaccines are stored. However, when an alarm is activated during nonworking hours, health workers cannot see the alarm and so cannot respond, and without a supervisor’s assistance, they cannot always provide necessary follow-up.

In 2011, the Institute of Public Health installed a short message service (SMS, or text-message)-based system that monitored and logged temperature conditions in peripheral cold chain equipment. The aim was to assess whether these remote alarm systems facilitate better vaccine and cold chain management than non-connected temperature loggers. Twenty-four storage locations in Albania’s Shkodër District were equipped with sensors, monitors, and SMS gateways. When an alarm is activated, an SMS text message is sent to a central server that then sends a notification to health workers and supervisors in charge of the storage location. Once the problem has been addressed, its status is reported back to the central server.

Over 130 alarm incidents were detected in 10 months, and the system has demonstrated the following managerial benefits:

1. In 41% of incidents, supervisors phoned health workers or storekeepers to confirm the problem. In 15% of these cases they were able to assist with appropriate follow-up measures.
2. Procedural compliance by health workers increased due to the knowledge that supervisors are automatically alerted when inappropriate temperatures are recorded.
3. A permanent, centrally maintained record of each refrigerator’s performance has enabled district supervisors to track equipment failure rates and promptly replace equipment where needed.

In focus-group discussions, nurses and Expanded Programme on Immunization supervisors also found the technology to be beneficial for their work. However, while the study highlighted some qualitative benefits of the technology, it did not detect cases in which remote monitoring saved a vaccine from freezing or excessive temperature exposure. The cost-benefit case was therefore not clearly made. [Find out more](#) about innovations in temperature monitoring in Albania.

Supply chain modeling

An alternative distribution system is also being modeled in Albania. This model will support a cost-analysis exercise to determine the country’s optimal supply chain structure. This will help the Institute of Public Health to assess the benefits of a proposed reorganization of the subnational distribution system.

As part of health-sector reform in Albania, the current administrative structure of 36 districts is being consolidated into 12 regions. However, it is as yet unclear whether it would be preferable to organize the supply chain around this new structure (regional warehouses with onward distribution to health centers and health posts) or maintain the district-based system. Optimize is supporting the decision-making process through a cost analysis comparing both possibilities.



Staff members at the Institute of Public Health prepare vaccines for distribution to the Shkodër District.

August 2012 | Header photo: PATH/Katrina Peach | All other photos: PATH/Illir Kaso